Remarks/Arguments:

This is a reply to the office action of August 23, 2007.

The Abstract

The examiner noted a misspelling in the abstract. That has been corrected, and the abstract has been split into two sentences to improve readability.

The Specification

The examiner correctly observed that the specification as filed had headings in improper U.S. format. We are more than willing to comply with the requirement for corrections; however, we note that in the publication, the PTO's printer has already put the headings in the proper format. Considering the length and complexity of the description, and the fact that the original specification did not have paragraph numbers, we are concerned that by attempting to correct the format – which has already been corrected – we may only confuse matters. We ask the examiner to consider whether, under these circumstances, the specification's heading format may be accepted without change.

We have proofread the application as published, and have made changes above, using the paragraph numbers from Publication No. 2005/018832.

Rejection under 35 USC 112

Claims 4 - 6 were rejected as indefinite on the ground that flax and cotton "are not wholly identifiable as a polysaccharide".

Under "cotton", Wikipedia states that "Cotton fibre, once it has been processed to remove seeds and traces of honey, protein, vegetable matter, and other impurities, consists of nearly pure cellulose, a natural polymer." Analogously, flax fiber is cellulose in allomorph state I plus some impurity. Thus, we believe that it is not improper to group flax and cotton with viscose and cellulose in Claim 4. It is also noted that Ward et al. speaks of "cotton cellulose and other saccharides" (line 2 of the abstract), in line with our definition of cotton as a polysaccharide fiber.

While we believe claim 4 was proper originally, we have amended it above by adding "fibers" to the cotton and flax terms. We believe this change should overcome the section 112 rejection of claim 4.

A typographical error has been corrected in claim 6.

Rejections under 35 USC 102

The examiner rejected claims 1 - 5, 10, 11 and 13 as anticipated by Ward et al. because, on page 271, the article discloses that "the radicals can react absent the radical source".

On page 271 it is stated that "Conceivably, polymerizations can be initiated... by direct contact between previously activated cotton and monomers". However, immediately after is the statement: "Exploratory investigations... have met with limited success", which is an elegant way to say that the experiments were a failure. Thus, in our view, the document not only does not disclose the process of the present invention, but even teaches away, since it reveals that attempts to react radicals absent the radical source were unsuccessful.

Claims 1 - 5 and 11 - 14 were rejected as anticipated by Zara et al. However, we could not find any mention in Zara et al. of a separate production of radicals and polymerization step. Thus, Zara et al. discloses simultaneous generation of radicals and polymerization. The fact that Fe is added before addition of the monomer does not imply separate generation of radicals and polymerization, since the decomposition of hydrogen peroxide by Fe(II) takes time and thus continues after addition of the monomer. Consequently, Zara does not anticipate the claims of the application.

Rejections under 35 USC 103

Claims 1 - 4 and 7 - 8 were rejected as obvious over of Burke, N and Guilliet, J. in view of Kraessig. The rejection is respectfully traversed.

Burke, N and Guillet, J. disclose a process for the preparation of grafted polymers. The polymers are not polysaccharides. Thus, Burke, N and Guillet, J. differ from the present application in two technical aspects: 1) the polymers are irradiated in the presence of a compound that reacts with the generated free radical and 2) the type of polymer.

Kraessig mentions the use of radiation for creating free radicals on polysaccharides, but discourages one from using this source: "Unfortunately irradiation causes, however, also some undesirable side effects. Cellulose radicalized by irradiation is degraded by splitting of glucosidic linkages in a disproportionation reaction ..." (page 420, first col., first paragraph).

Thus the invention recited in claims 1 - 14 would not have been obvious to the skilled person from the teachings of Burke, of Guillet and of Kraessig.

The Examiner also rejected the claims as unpatentable over the combination of Ward et al. and Demott. However, neither Ward et al. nor Demott discloses a process for the functionalization of a polysaccharide fibre according to claim 1 of the present application. As noted above, Ward et al. mention the theoretical possibility of performing the process in two steps, but they admit that in practice the process was not performed. Moreover, Demott discloses a process wherein cotton fabric is functionalized by using a conventional free-radical source. The combination of these two documents would not have led to the process of claims 1 - 14.

For the above reasons, we believe that the claims as amended are in proper form and that they are patentable over the prior art of record.

Respectfully submitted,

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November 21, 2007